

CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA

LOCATION.--Lat 39°57'42", long 75°48'06", Chester County, Hydrologic Unit 02040205, on left bank at bridge on SR 15068 at Modena, and 300 ft upstream from Dennis Run.

DRAINAGE AREA.--55.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1970 to current year.

REVISED RECORDS.--WDR PA-74-1: 1971-72(P), 1973. WDR PA-75-1: 1974(m).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 265 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Slight regulation from Rock Run Reservoir 5.6 mi upstream, capacity, 982 acre-ft, and by Lukens Steel Company. Diversion from Rock Run Reservoir for municipal supply of city of Coatesville reenters creek upstream from gage. Satellite and landline telemetry at station.

COOPERATION.--Records of diversion provided by the city of Coatesville.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Mar. 22	0430	*4,690	*9.38	June 19	0830	1,330	8.96

**DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES**

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	38	49	47	e40	100	108	84	61	58	38	40
2	46	79	46	48	e38	93	103	90	60	50	40	104
3	40	159	43	48	e37	83	103	85	54	62	41	40
4	57	61	e42	70	e35	76	162	80	53	61	123	58
5	120	50	41	124	e31	71	e110	77	51	50	48	33
6	59	48	165	67	e30	69	e96	77	102	48	40	29
7	47	44	109	54	e33	66	102	71	83	44	42	28
8	44	41	65	52	e31	62	106	69	61	43	36	29
9	41	40	53	50	e30	65	188	65	54	41	37	33
10	219	40	73	75	e29	60	158	96	49	49	36	31
11	133	41	96	111	e29	74	111	110	47	43	34	32
12	65	40	58	66	e29	129	108	73	51	41	34	31
13	53	39	64	57	e29	84	97	85	119	38	35	90
14	49	40	214	50	e70	69	95	123	68	46	39	42
15	45	40	211	e45	e110	63	95	73	62	54	45	143
16	42	39	100	e43	e90	66	108	61	64	50	36	46
17	50	39	77	e40	e100	159	152	62	54	45	35	33
18	66	37	66	e38	e80	91	186	61	73	43	33	31
19	46	38	61	e36	212	72	122	112	586	42	34	56
20	57	39	71	e40	191	67	108	148	97	47	31	64
21	64	41	99	e38	128	486	219	134	e70	40	30	39
22	51	39	73	e36	104	2340	291	123	262	38	30	31
23	55	41	60	e35	152	e500	146	242	90	35	30	31
24	51	43	57	e33	206	204	119	207	66	36	32	32
25	43	44	51	e35	220	165	107	116	54	38	30	51
26	42	74	51	e33	197	144	103	87	54	89	29	369
27	41	286	51	e32	132	132	101	74	52	87	31	111
28	40	93	50	e31	323	307	98	80	105	49	38	56
29	40	61	49	e31	132	160	92	74	101	44	31	44
30	39	53	47	e30	---	131	87	67	85	39	30	39
31	40	---	47	e30	---	117	---	64	---	39	44	---
TOTAL	1858	1767	2339	1525	2868	6305	3781	2970	2788	1489	1192	1796
MEAN	59.9	58.9	75.5	49.2	98.9	203	126	95.8	92.9	48.0	38.5	59.9
MAX	219	286	214	124	323	2340	291	242	586	89	123	369
MIN	39	37	41	30	29	60	87	61	47	35	29	28
CFSM	1.09	1.07	1.37	.89	1.80	3.70	2.29	1.74	1.69	.87	.70	1.09
IN.	1.26	1.20	1.58	1.03	1.94	4.26	2.56	2.01	1.89	1.01	.81	1.21
(†)	0	0	0	0	+0.1	0	0	-0.1	0	0	-0.4	+0.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2000, BY WATER YEAR (WY)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
MEAN	56.0	73.0	93.1	104	108	128	119	95.7	82.5	69.7	46.9	56.0																				
MAX	190	144	306	330	235	308	241	213	302	236	123	186																				
(WY)	1977	1977	1977	1979	1971	1994	1983	1989	1972	1984	1971	1979																				
MIN	21.7	22.8	21.5	20.1	41.9	43.0	39.9	41.5	28.4	18.4	16.8	21.4																				
(WY)	1998	1999	1999	1981	1992	1985	1985	1999	1999	1999	1995	1981																				

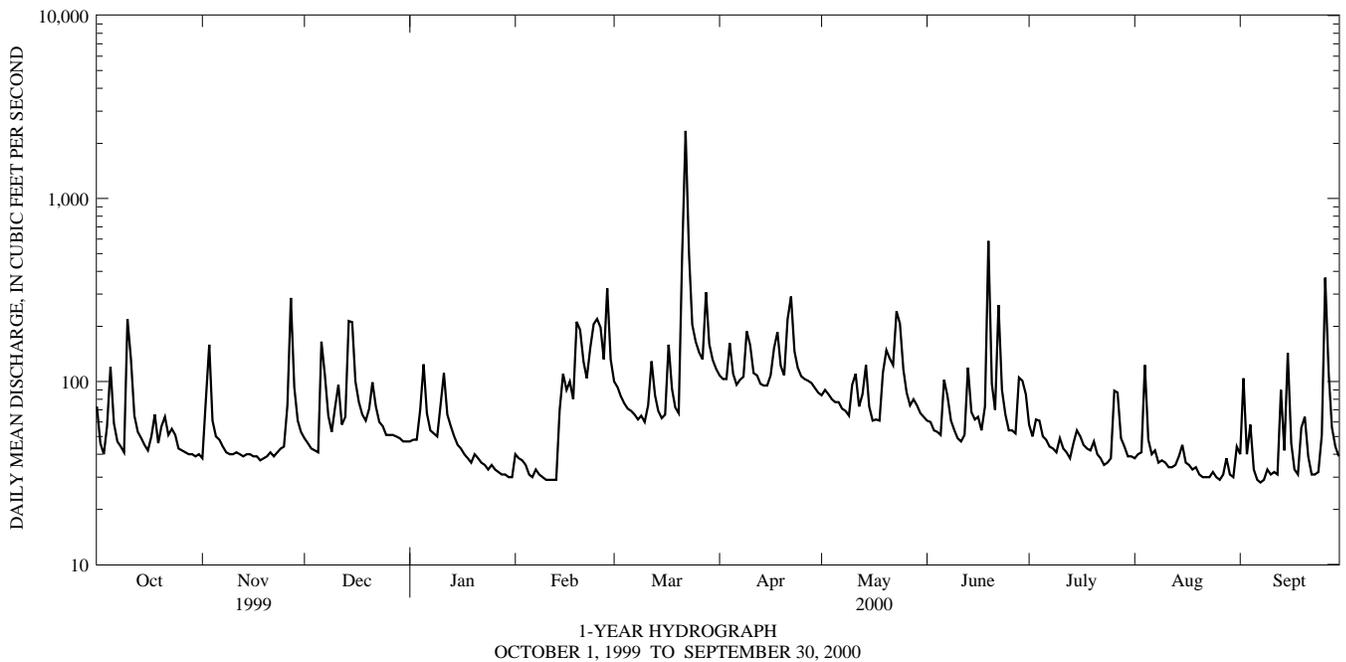
† Change in contents from Rock Run Reservoir, equivalent in cubic feet per second.
e Estimated.

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SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1970 - 2000	
ANNUAL TOTAL	23979		30678			
ANNUAL MEAN	65.7		83.8		86.0	
HIGHEST ANNUAL MEAN					130	1979
LOWEST ANNUAL MEAN					37.6	1981
HIGHEST DAILY MEAN	2660	Sep 16	2340	Mar 22	4010	Jun 22 1972
LOWEST DAILY MEAN	12	Aug 3	28	Sep 7	9.8	Sep 13 1981
ANNUAL SEVEN-DAY MINIMUM	14	Jul 29	30	Feb 7	11	Sep 4 1995
INSTANTANEOUS PEAK FLOW			4690	Mar 22	a9600	Jun 29 1973
INSTANTANEOUS PEAK STAGE			9.38	Mar 22	12.47	Jun 29 1973
ANNUAL RUNOFF (CFSM)	1.19		1.52		1.56	
ANNUAL RUNOFF (INCHES)	16.22		20.75		21.23	
10 PERCENT EXCEEDS	101		143		147	
50 PERCENT EXCEEDS	43		56		57	
90 PERCENT EXCEEDS	18		33		26	

a From rating curve extended above 7,800 ft³/s on basis of slope-area measurement at gage height 11.48 ft.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1969 to October 1978, August 1981 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1971 to October 1977, August 1981 to current year.
 pH: May 1971 to October 1977, August 1981 to current year.
 WATER TEMPERATURES: May 1971 to October 1977, August 1981 to current year.
 DISSOLVED OXYGEN: May 1971 to October 1977, August 1981 to current year.

INSTRUMENTATION.--Water-quality monitor May 1971 to October 1977, August 1981 to current year.

REMARKS.--Specific conductance records rated good except for period Oct. 7 to Nov. 18, which are fair. pH records rated good except for periods May 23 to June 22, which are fair and July 19-24, which are poor. Water temperature records rated good. Dissolved oxygen records rated good except for periods Oct. 7 to Nov. 18, Nov. 26 to Dec. 2, Apr. 19 to May 12, and Aug. 24 to Sept. 5, which are poor. Data collection discontinued during winter months since 1981 water year. Other interruptions in the record were due to malfunctions of the equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 858 microsiemens, Jan. 10, 1977; minimum, 72 microsiemens, Nov. 16, 1985.
 pH: Maximum, 10.0, Dec. 21, 1971; minimum, 5.9, July 14, 1991.
 WATER TEMPERATURE: Maximum, 33.5°C, July 19, 1977; minimum, 0.0°C, many days during winters.
 DISSOLVED OXYGEN: Maximum, 19.5 mg/L, Sept. 2, 1990; minimum, 0.6 mg/L, Nov. 1, 3, 1974.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	DIS-CHARGE, INST. (CUBIC FEET PER SECOND) (00061)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD) UNITS (00400)	SPE-CIFIC CON-DUCT-ANCE (µS/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT 1999 29...	80020	1028	40	11.3	7.7	367	9.7	120	30	10
DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (MG/L AS N) (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC WATER UNFLTRD IT FIELD (MG/L AS CACO3) (00419)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	
OCT 1999 29...	5.0	.7	18	25	63	30	.5	11	31	
DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ALUM-INUM, DIS-SOLVED (µG/L AS AL) (01106)	ARSENIC DIS-SOLVED (µG/L AS AS) (01000)	BORON, DIS-SOLVED (µG/L AS B) (01020)	CADMIUM DIS-SOLVED (µG/L AS CD) (01025)	
OCT 1999 29...	<.020	3.73	<.010	.068	193	E7	<2.0	57	<1.0	
DATE	CHRO-MIUM, DIS-SOLVED (µG/L AS CR) (01030)	COPPER, DIS-SOLVED (µG/L AS CU) (01040)	IRON, DIS-SOLVED (µG/L AS FE) (01046)	LEAD, DIS-SOLVED (µG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (µG/L AS MN) (01056)	MERCURY DIS-SOLVED (µG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (µG/L AS MO) (01060)	NICKEL, DIS-SOLVED (µG/L AS NI) (01065)	ZINC, DIS-SOLVED (µG/L AS ZN) (01090)	
OCT 1999 29...	6.4	3.0	30	<1.0	16	<.2	37	2	<20	

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	COLI- FORM, FECAL, 0.45 µM-MF (COLS./ 100 ML) (31616)
OCT 1999									
29...	1010	80020	1028	40	11.3	7.7	367	9.7	--
MAR 2000									
13...	1300	1028	1028	85	13.8	8.6	266	8.1	2600
28...	0856	1028	1028	405	10.5	7.6	192	10.2	2000
APR									
10...	1130	1028	1028	155	12.4	8.2	232	9.2	820
26...	1130	1028	1028	105	11.4	7.8	260	11.4	230
MAY									
04...	1420	1028	1028	83	11.8	8.7	272	17.4	K97
16...	1530	1028	1028	60	9.7	8.1	284	17.5	640
23...	1400	1028	1028	178	9.7	7.7	225	14.8	K24000
JUN									
01...	1115	1028	1028	61	11.3	8.3	301	17.0	570
13...	1115	1028	1028	187	8.8	7.4	230	19.0	11000
27...	1200	1028	1028	59	9.8	8.4	317	23.0	K2100
JUL									
12...	1200	1028	1028	43	9.4	8.2	320	21.1	590
21...	1100	1028	1028	42	8.8	8.5	316	19.3	1300
26...	1210	1028	1028	200	8.4	7.8	247	19.3	K18000
AUG									
02...	1400	1028	1028	45	9.3	8.1	356	24.0	1100
10...	1520	1028	1028	35	10.3	8.8	342	25.3	570
24...	1430	1028	1028	33	11.0	8.8	347	20.8	1300
SEP									
05...	1315	1028	1028	34	9.5	8.1	315	20.3	1100
20...	1430	1028	1028	65	10.0	8.2	285	19.0	K9700

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATESREMARKS.--Samples were collected using a Hess sampler with a mesh size of 500 μm . Each sample covered a total area of 3.2 m^2 .

Date	10/29/99
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (Flatworms)	
Tricladida	
Planariidae	2
Mollusca	
Gastropoda (Snails)	
Basommatophora	
Planorbidae	
<i>Gyraulus</i>	1
Annelida (Segmented Worms)	
Oligochaeta	3
Arthropoda	
Acariformes	
Hydrachnidia (Water Mites)	12
Insecta	
Ephemeroptera (Mayflies)	
Baetidae	
<i>Baetis</i>	1
Caenidae	
<i>Caenis</i>	1
Ephemerellidae	
<i>Serratella</i>	8
Heptageniidae	
<i>Stenonema</i>	7
Megaloptera	
Corydalidae (Fishflies and Dobsonflies)	
<i>Corydalus</i>	1
Trichoptera (Caddisflies)	
Hydropsychidae	
<i>Cheumatopsyche</i>	47
<i>Hydropsyche</i>	62
Hydroptilidae	
<i>Leucotrichia</i>	13
Lepidoptera	
Pyralididae (Moths)	
<i>Petrophila</i>	3
Coleoptera (Beetles)	
Elmidae (Riffle Beetles)	
<i>Optioservus</i>	36
<i>Oulimnius</i>	7
<i>Stenelmis</i>	57
Hydrophilidae	
<i>Berosus</i>	2
Psephenidae (Water Pennies)	
<i>Psephenus</i>	9
Diptera (True Flies)	
Chironomidae (Midges)	71
Empididae (Dance Flies)	
<i>Hemerodromia</i>	2
Simuliidae (Black Flies)	
<i>Simulium</i>	4
Tipulidae (Crane Flies)	
<i>Antocha</i>	2
Total Count	351
Total number of taxa	22

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SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	316	271	296	387	370	379	---	---	---	---	---	---
2	339	315	326	388	235	349	---	---	---	---	---	---
3	360	332	343	307	239	279	---	---	---	---	---	---
4	357	204	313	331	307	316	---	---	---	---	---	---
5	307	206	262	353	331	341	---	---	---	---	---	---
6	323	294	307	371	350	359	---	---	---	---	---	---
7	347	320	332	379	355	365	---	---	---	---	---	---
8	368	329	345	380	364	373	---	---	---	---	---	---
9	369	352	362	380	359	368	---	---	---	---	---	---
10	368	195	272	374	353	362	---	---	---	---	---	---
11	272	206	242	378	356	364	---	---	---	---	---	---
12	321	272	294	379	360	368	---	---	---	---	---	---
13	349	318	328	372	352	362	---	---	---	---	---	---
14	355	340	348	363	344	352	---	---	---	---	---	---
15	370	347	360	355	343	348	---	---	---	---	---	---
16	370	352	362	351	336	343	---	---	---	---	---	---
17	372	280	362	348	330	339	---	---	---	---	---	---
18	338	244	316	349	329	337	---	---	---	---	---	---
19	360	327	342	344	327	337	---	---	---	---	---	---
20	363	294	335	350	322	335	---	---	---	---	---	---
21	343	303	320	347	322	333	---	---	---	---	---	---
22	349	338	343	331	308	321	---	---	---	---	---	---
23	341	331	335	328	293	317	---	---	---	---	---	---
24	361	325	341	319	296	311	---	---	---	---	---	---
25	364	353	359	332	303	317	---	---	---	---	---	---
26	377	353	363	---	---	---	---	---	---	---	---	---
27	382	360	371	---	---	---	---	---	---	---	---	---
28	376	363	369	---	---	---	---	---	---	---	---	---
29	382	367	374	---	---	---	---	---	---	---	---	---
30	387	368	378	---	---	---	---	---	---	---	---	---
31	393	372	382	---	---	---	---	---	---	---	---	---
MONTH	393	195	335	388	235	343	---	---	---	---	---	---
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	274	268	271	289	270	282
2	---	---	---	---	---	---	275	266	270	291	250	274
3	---	---	---	---	---	---	271	263	267	280	253	272
4	---	---	---	---	---	---	271	201	232	278	266	272
5	---	---	---	---	---	---	263	236	248	282	269	276
6	---	---	---	---	---	---	269	252	259	279	269	275
7	---	---	---	301	288	293	274	268	270	284	277	280
8	---	---	---	298	287	292	276	257	269	285	276	280
9	---	---	---	300	287	292	257	223	232	287	276	282
10	---	---	---	300	287	294	252	217	233	292	192	273
11	---	---	---	304	276	293	262	247	251	272	223	243
12	---	---	---	277	243	254	266	250	255	283	267	275
13	---	---	---	276	253	263	270	237	264	292	164	273
14	---	---	---	286	269	276	272	254	266	269	226	243
15	---	---	---	289	278	283	272	255	266	281	261	270
16	---	---	---	297	251	287	267	234	258	291	268	279
17	---	---	---	257	216	239	255	232	246	303	281	293
18	---	---	---	255	244	248	242	219	233	299	282	290
19	---	---	---	250	230	239	259	241	248	296	196	258
20	---	---	---	234	222	228	268	258	261	261	183	235
21	---	---	---	232	113	193	271	167	239	233	200	219
22	---	---	---	---	---	---	224	177	201	243	200	229
23	---	---	---	---	---	---	258	224	239	236	193	215
24	---	---	---	266	234	249	268	256	261	258	197	229
25	---	---	---	276	266	272	267	256	261	268	244	253
26	---	---	---	281	270	275	267	257	261	287	264	274
27	---	---	---	283	241	276	268	260	264	297	280	287
28	---	---	---	241	187	212	273	256	264	291	276	283
29	---	---	---	258	226	241	286	270	275	298	280	286
30	---	---	---	269	254	261	285	273	281	321	287	300
31	---	---	---	273	263	268	---	---	---	308	292	299
MONTH	---	---	---	304	113	262	286	167	255	321	164	268

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SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	301	276	290	292	277	285	352	320	334	333	299	317
2	307	292	299	307	288	296	360	330	343	321	179	243
3	311	297	303	310	164	289	351	332	342	294	235	268
4	311	297	304	301	254	286	339	146	238	303	227	265
5	311	280	300	322	298	309	314	284	298	331	298	314
6	312	184	260	332	313	323	330	308	319	344	312	332
7	290	245	274	342	317	330	332	315	323	358	330	346
8	293	275	284	344	318	332	348	319	331	363	331	346
9	307	284	295	340	320	329	353	325	339	365	324	341
10	320	295	306	337	277	312	350	322	337	345	311	326
11	321	301	310	328	304	315	357	337	349	334	295	318
12	325	209	313	340	311	326	361	324	346	337	293	312
13	259	179	243	349	324	338	353	327	339	318	167	255
14	278	252	264	352	314	332	354	295	335	305	275	287
15	298	274	286	329	292	308	336	297	313	301	148	222
16	298	285	291	322	296	308	344	317	329	292	230	262
17	---	---	---	320	306	314	352	308	329	322	287	302
18	---	---	---	326	304	317	359	336	349	347	307	327
19	---	---	---	326	301	315	351	326	340	358	220	306
20	---	---	---	321	296	309	357	330	344	322	266	287
21	---	---	---	344	313	328	358	336	350	340	316	326
22	---	---	---	---	---	---	368	339	354	346	325	338
23	271	235	255	---	---	---	370	335	352	359	335	347
24	299	271	285	---	---	---	355	326	343	356	321	343
25	308	292	300	342	326	336	363	336	352	357	164	330
26	---	---	---	345	162	275	367	333	355	217	158	188
27	---	---	---	308	217	265	375	353	364	284	217	254
28	319	155	284	330	305	318	356	275	313	318	281	297
29	271	204	245	337	312	327	346	317	329	337	312	323
30	287	254	266	336	318	329	361	324	343	352	330	340
31	---	---	---	350	320	333	343	279	308	---	---	---
MONTH	325	155	284	352	162	314	375	146	334	365	148	302

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.9	7.6	7.7	9.0	7.5	7.9	7.7	7.4	7.5	---	---	---
2	8.1	7.7	7.8	7.9	7.5	7.6	---	---	---	---	---	---
3	8.4	7.7	7.9	7.6	7.4	7.5	---	---	---	---	---	---
4	7.9	7.7	7.7	7.7	7.4	7.5	---	---	---	---	---	---
5	7.7	7.7	7.7	8.0	7.4	7.5	---	---	---	---	---	---
6	7.9	7.7	7.7	8.3	7.5	7.6	---	---	---	---	---	---
7	8.3	7.7	7.8	8.3	7.5	7.6	---	---	---	---	---	---
8	8.5	7.7	7.9	8.5	7.5	7.6	---	---	---	---	---	---
9	8.6	7.7	7.9	8.5	7.5	7.6	---	---	---	---	---	---
10	7.8	7.5	7.7	8.7	7.5	7.7	---	---	---	---	---	---
11	7.8	7.5	7.6	8.4	7.4	7.6	---	---	---	---	---	---
12	8.0	7.6	7.7	8.7	7.5	7.8	---	---	---	---	---	---
13	8.2	7.7	7.7	8.8	7.5	7.8	---	---	---	---	---	---
14	8.2	7.6	7.7	8.7	7.4	7.8	---	---	---	---	---	---
15	8.2	7.6	7.7	8.7	7.5	7.9	---	---	---	---	---	---
16	8.4	7.6	7.8	8.6	7.5	7.9	---	---	---	---	---	---
17	8.4	7.5	7.7	8.6	7.5	7.8	---	---	---	---	---	---
18	8.2	7.4	7.6	8.8	7.5	7.9	---	---	---	---	---	---
19	8.5	7.6	7.7	8.9	7.5	7.7	---	---	---	---	---	---
20	7.8	7.6	7.6	8.8	7.5	7.6	---	---	---	---	---	---
21	8.4	7.6	7.7	8.9	7.4	7.6	---	---	---	---	---	---
22	8.6	7.6	7.7	8.5	7.4	7.6	---	---	---	---	---	---
23	8.4	7.5	7.7	8.7	7.4	7.6	---	---	---	---	---	---
24	8.8	7.6	7.8	8.3	7.4	7.5	---	---	---	---	---	---
25	8.7	7.6	7.8	8.1	7.4	7.5	---	---	---	---	---	---
26	8.8	7.6	7.8	8.2	7.4	7.6	---	---	---	---	---	---
27	8.9	7.6	7.9	7.5	7.3	7.4	---	---	---	---	---	---
28	8.9	7.6	7.9	7.5	7.2	7.3	---	---	---	---	---	---
29	8.9	7.6	7.9	7.5	7.2	7.3	---	---	---	---	---	---
30	8.9	7.6	7.8	7.7	7.3	7.4	---	---	---	---	---	---
31	8.9	7.6	7.9	---	---	---	---	---	---	---	---	---
MAX	8.9	7.7	7.9	9.0	7.5	7.9	7.7	7.4	7.5	---	---	---
MIN	7.7	7.4	7.6	7.5	7.2	7.3	7.7	7.4	7.5	---	---	---

CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	8.1	7.6	7.7	8.1	7.6	7.7	8.4	7.5	7.7
2	---	---	---	8.3	7.6	7.7	8.2	7.6	7.7	8.5	7.5	7.7
3	---	---	---	8.4	7.7	7.8	8.6	7.6	7.7	8.6	7.5	7.7
4	---	---	---	8.3	7.5	7.7	7.9	7.5	7.6	8.8	7.4	7.8
5	---	---	---	8.5	7.5	7.6	8.7	7.6	7.9	9.2	7.4	7.9
6	---	---	---	8.7	7.5	7.7	8.8	7.7	8.0	9.1	7.6	8.0
7	---	---	---	8.8	7.5	7.7	9.1	7.6	8.2	9.2	7.5	8.0
8	---	---	---	9.0	7.5	7.8	9.2	7.6	8.1	9.1	7.6	8.0
9	---	---	---	9.0	7.5	7.8	8.8	7.6	7.8	9.2	7.7	8.2
10	---	---	---	9.2	7.5	7.8	9.1	7.6	8.1	8.9	7.7	8.0
11	---	---	---	8.0	7.5	7.6	9.0	7.6	8.0	8.5	7.8	8.0
12	---	---	---	8.1	7.6	7.6	9.4	7.6	8.5	8.7	7.7	7.9
13	---	---	---	8.7	7.6	7.7	9.4	7.6	8.6	8.7	7.7	7.9
14	---	---	---	8.8	7.6	7.8	9.5	7.6	8.6	8.2	7.6	7.7
15	---	---	---	9.0	7.5	7.8	9.2	7.6	8.2	7.9	7.7	7.7
16	---	---	---	9.0	7.5	7.8	9.3	7.5	7.9	8.3	7.6	7.7
17	---	---	---	8.1	7.4	7.6	7.7	7.5	7.6	8.4	7.6	7.8
18	---	---	---	8.6	7.6	7.7	7.9	7.5	7.6	8.4	7.6	7.8
19	---	---	---	8.8	7.6	7.9	8.8	7.4	7.7	7.8	7.6	7.6
20	---	---	---	9.0	7.6	7.9	8.9	7.5	7.9	7.7	7.5	7.6
21	---	---	---	8.0	7.4	7.6	7.8	7.5	7.6	7.5	7.4	7.5
22	---	---	---	---	---	---	7.7	7.5	7.6	7.6	7.4	7.5
23	---	---	---	---	---	---	8.0	7.6	7.7	7.8	7.2	7.4
24	---	---	---	7.6	7.5	7.6	8.1	7.6	7.7	7.8	7.5	7.6
25	8.2	7.6	7.7	7.7	7.6	7.6	8.1	7.6	7.7	7.9	7.4	7.6
26	8.1	7.6	7.6	7.9	7.6	7.7	8.1	7.6	7.7	8.2	7.6	7.8
27	8.3	7.6	7.7	7.9	7.6	7.7	7.9	7.4	7.6	8.1	7.6	7.8
28	8.2	7.6	7.7	7.7	7.5	7.6	8.1	7.4	7.6	8.3	7.6	7.9
29	7.8	7.6	7.6	7.9	7.6	7.7	8.1	7.3	7.6	8.5	7.6	7.9
30	---	---	---	7.9	7.6	7.7	8.3	7.3	7.7	8.8	7.7	8.1
31	---	---	---	8.0	7.6	7.7	---	---	---	9.0	7.7	8.1
MAX	8.3	7.6	7.7	9.2	7.7	7.9	9.5	7.7	8.6	9.2	7.8	8.2
MIN	7.8	7.6	7.6	7.6	7.4	7.6	7.7	7.3	7.6	7.5	7.2	7.4
DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.1	7.7	8.1	8.8	7.4	7.8	8.4	7.6	7.9	8.6	7.7	7.9
2	9.1	7.5	8.1	8.9	7.3	8.0	8.6	7.6	7.9	7.9	7.6	7.7
3	8.9	7.5	8.0	8.9	7.4	7.9	8.4	7.7	7.9	7.9	7.6	7.8
4	8.8	7.5	8.0	8.4	7.3	7.7	7.9	7.6	7.8	8.0	7.7	7.8
5	8.7	7.5	8.0	9.0	7.5	7.9	8.2	7.7	7.9	8.3	7.8	8.0
6	7.8	7.2	7.5	8.9	7.5	8.0	8.1	7.8	7.9	8.5	7.8	8.1
7	8.5	7.2	7.7	8.9	7.4	8.1	8.4	7.7	7.9	8.7	7.8	8.3
8	8.5	7.2	7.7	8.9	7.3	8.0	8.6	7.7	8.0	9.0	7.8	8.4
9	8.3	7.3	7.7	9.0	7.3	8.1	8.7	7.7	8.0	9.1	7.8	8.6
10	8.2	7.4	7.6	8.9	7.3	8.0	8.9	7.6	8.1	9.2	7.7	8.6
11	8.1	7.3	7.5	9.0	7.5	8.0	8.9	7.6	8.1	9.2	7.7	8.5
12	7.9	7.3	7.5	9.3	7.3	8.3	8.8	7.6	8.0	9.2	7.7	8.5
13	7.5	7.3	7.4	9.1	7.5	8.1	8.7	7.6	7.9	8.7	7.6	7.7
14	7.3	7.3	7.3	8.1	7.5	7.7	8.0	7.7	7.8	8.2	7.6	7.8
15	7.7	7.2	7.4	8.2	7.5	7.6	8.6	7.7	7.9	7.7	7.5	7.6
16	7.9	7.3	7.5	8.2	7.4	7.6	8.7	7.6	7.9	7.9	7.6	7.7
17	---	---	---	8.4	7.4	7.7	8.9	7.7	8.1	8.1	7.7	7.8
18	---	---	---	8.6	7.3	7.8	8.1	7.7	7.8	8.5	7.7	8.0
19	---	---	---	8.6	7.4	7.7	8.8	7.8	8.1	7.9	7.6	7.7
20	---	---	---	9.1	8.4	8.6	9.0	7.7	8.3	8.3	7.6	7.7
21	---	---	---	8.9	8.2	8.4	9.1	7.8	8.5	8.4	7.6	7.9
22	---	---	---	---	---	---	9.2	7.8	8.6	8.7	7.6	8.1
23	7.9	7.3	7.6	---	---	---	9.0	7.8	8.3	8.1	7.6	7.8
24	8.0	7.4	7.6	---	---	---	9.2	7.7	8.2	8.3	7.5	7.7
25	8.3	7.4	7.7	8.5	7.8	8.1	9.1	7.7	8.4	8.5	7.5	7.7
26	---	---	---	8.0	7.7	7.8	9.1	7.7	8.4	7.7	7.3	7.3
27	---	---	---	8.0	7.7	7.8	9.0	7.8	8.4	7.5	7.4	7.5
28	9.1	7.4	7.8	8.3	7.7	7.9	8.8	7.7	8.1	8.0	7.5	7.7
29	8.4	7.4	7.6	8.3	7.7	7.9	8.6	7.7	8.1	8.1	7.6	7.7
30	8.6	7.4	7.8	8.4	7.7	7.9	8.8	7.8	8.1	8.2	7.6	7.8
31	---	---	---	8.4	7.7	7.9	8.4	7.7	7.9	---	---	---
MAX	9.1	7.7	8.1	9.3	8.4	8.6	9.2	7.8	8.6	9.2	7.8	8.6
MIN	7.3	7.2	7.3	8.0	7.3	7.6	7.9	7.6	7.8	7.5	7.3	7.3

CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	17.0	14.5	16.0	15.0	13.0	14.0	5.0	3.5	4.0	---	---	---
2	17.5	14.5	16.0	16.5	13.5	14.5	---	---	---	---	---	---
3	18.5	15.5	17.0	14.5	10.5	12.5	---	---	---	---	---	---
4	17.5	16.0	16.5	10.5	8.5	9.5	---	---	---	---	---	---
5	16.5	13.5	14.5	10.5	7.5	9.0	---	---	---	---	---	---
6	15.0	12.0	13.5	12.0	9.5	10.5	---	---	---	---	---	---
7	14.0	12.0	13.0	11.0	9.0	10.0	---	---	---	---	---	---
8	13.5	10.5	12.0	10.0	8.0	9.0	---	---	---	---	---	---
9	15.5	12.5	14.0	10.5	7.5	9.0	---	---	---	---	---	---
10	16.0	15.0	15.5	12.5	10.0	11.0	---	---	---	---	---	---
11	18.0	15.5	16.5	12.5	10.0	12.0	---	---	---	---	---	---
12	16.0	13.5	14.5	10.0	8.5	9.5	---	---	---	---	---	---
13	16.0	12.5	14.5	12.0	8.5	10.0	---	---	---	---	---	---
14	15.5	13.0	14.5	11.5	9.5	10.5	---	---	---	---	---	---
15	13.5	11.0	12.5	10.0	8.5	9.5	---	---	---	---	---	---
16	14.5	11.0	13.0	8.5	6.5	7.5	---	---	---	---	---	---
17	15.5	13.5	14.5	7.0	5.0	6.0	---	---	---	---	---	---
18	16.0	13.0	14.5	7.0	5.0	6.0	---	---	---	---	---	---
19	13.0	11.5	12.5	8.0	6.0	7.0	---	---	---	---	---	---
20	13.0	12.5	12.5	10.0	7.0	8.5	---	---	---	---	---	---
21	13.0	11.0	12.0	12.0	10.0	11.0	---	---	---	---	---	---
22	13.0	10.0	11.5	12.5	11.0	11.5	---	---	---	---	---	---
23	12.5	11.0	11.5	14.0	12.5	13.0	---	---	---	---	---	---
24	12.0	10.0	11.0	14.5	13.5	14.0	---	---	---	---	---	---
25	12.0	9.5	11.0	14.0	12.5	13.5	---	---	---	---	---	---
26	12.5	9.5	11.0	14.5	12.0	13.0	---	---	---	---	---	---
27	12.5	10.5	11.5	14.0	11.0	12.0	---	---	---	---	---	---
28	12.0	10.0	11.0	11.0	9.0	10.0	---	---	---	---	---	---
29	12.5	9.5	11.0	9.0	7.0	8.0	---	---	---	---	---	---
30	13.5	10.5	12.0	7.0	5.0	6.0	---	---	---	---	---	---
31	14.5	12.0	13.0	---	---	---	---	---	---	---	---	---
MONTH	18.5	9.5	13.4	16.5	5.0	10.2	5.0	3.5	4.0	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	7.5	5.5	6.5	13.0	8.0	11.0	15.0	11.0	13.5
2	---	---	---	8.0	6.5	7.0	13.0	10.0	11.5	17.5	13.5	15.5
3	---	---	---	8.0	5.5	6.5	15.0	12.0	13.5	17.5	12.5	15.0
4	---	---	---	8.5	5.0	6.5	15.0	12.0	13.5	18.5	13.5	16.0
5	---	---	---	9.5	5.5	7.5	12.0	9.5	10.5	20.5	15.5	18.0
6	---	---	---	9.5	6.0	8.0	14.0	8.5	11.0	21.5	17.0	19.5
7	---	---	---	10.5	6.0	8.5	14.0	10.5	12.5	22.5	18.0	20.5
8	---	---	---	13.0	8.5	11.0	16.5	11.5	14.0	22.5	19.0	21.0
9	---	---	---	13.0	10.5	12.0	13.5	8.5	10.5	23.0	19.0	21.5
10	---	---	---	13.0	11.0	12.0	12.5	8.0	10.5	22.0	17.5	20.0
11	---	---	---	12.0	9.0	10.5	11.0	9.5	10.5	20.0	16.0	18.0
12	---	---	---	9.0	7.0	8.5	13.5	10.0	11.5	21.0	17.0	19.0
13	---	---	---	9.0	5.5	7.5	12.0	8.0	10.5	21.5	17.5	19.5
14	---	---	---	10.5	6.5	8.5	13.0	8.5	10.5	20.5	17.0	18.5
15	---	---	---	11.5	7.0	9.5	13.0	11.0	12.0	18.5	15.0	17.0
16	---	---	---	12.0	9.0	10.5	17.5	12.5	14.5	17.5	13.5	16.0
17	---	---	---	12.0	6.5	9.5	16.5	11.0	13.5	19.0	15.0	17.0
18	---	---	---	8.5	4.5	6.5	11.0	9.5	10.0	20.0	16.0	18.0
19	---	---	---	9.0	5.5	7.0	14.0	9.5	11.5	19.0	16.0	17.5
20	---	---	---	10.0	7.0	8.5	16.0	12.0	14.0	16.0	13.5	14.5
21	---	---	---	9.0	6.0	7.0	14.5	11.5	12.5	14.5	13.0	14.0
22	---	---	---	---	---	---	12.0	11.0	11.5	14.5	14.0	14.0
23	---	---	---	---	---	---	12.0	10.5	11.5	15.5	14.0	14.5
24	---	---	---	13.0	8.5	10.5	15.0	10.0	12.5	18.0	14.5	16.5
25	8.0	5.0	6.0	13.0	9.5	11.0	14.0	11.5	12.5	18.5	15.5	17.0
26	7.5	6.0	6.5	13.5	10.5	12.0	13.5	9.5	11.5	19.5	15.0	17.0
27	8.5	6.5	7.0	12.5	8.5	11.0	12.5	10.5	11.0	17.5	15.5	16.0
28	9.5	6.5	8.0	12.0	10.0	11.0	13.5	10.0	11.5	16.0	14.5	15.5
29	9.0	5.5	7.0	11.0	9.0	10.0	15.5	10.5	13.0	17.0	14.5	15.5
30	---	---	---	12.0	7.5	10.0	16.5	12.0	14.0	17.0	14.0	15.0
31	---	---	---	12.5	8.0	10.0	---	---	---	18.5	13.5	16.0
MONTH	9.5	5.0	6.9	13.5	4.5	9.1	17.5	8.0	11.9	23.0	11.0	17.0

CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN									
1	21.0	15.0	18.0	23.0	18.5	20.5	24.5	22.0	23.5	24.0	21.5	22.5
2	23.0	18.0	20.5	23.5	18.5	21.0	25.0	22.0	23.5	23.5	21.5	23.0
3	22.0	18.5	20.5	23.5	19.5	21.5	23.5	22.0	23.0	24.0	22.0	23.0
4	20.0	17.0	18.5	24.0	20.5	22.0	23.0	21.0	22.0	24.0	21.5	22.5
5	19.0	16.5	18.0	25.0	21.0	23.0	23.5	19.5	21.5	22.0	18.5	20.0
6	17.0	15.5	16.0	24.0	19.5	21.5	21.0	19.0	20.0	19.5	16.0	18.0
7	19.5	14.5	16.5	23.0	19.5	21.0	24.0	20.0	22.0	19.5	15.5	17.5
8	20.0	15.5	18.0	23.0	18.0	20.5	25.5	21.5	23.5	20.0	16.0	18.0
9	22.5	17.0	19.5	23.5	18.0	20.5	26.0	22.5	24.0	22.5	18.0	20.0
10	24.0	18.5	21.0	25.0	20.5	22.5	26.0	22.5	24.0	22.5	19.5	21.0
11	25.5	20.0	22.5	24.0	21.0	22.5	25.0	21.5	23.5	22.5	20.0	21.0
12	23.5	20.5	22.5	24.0	19.5	21.5	23.0	20.5	22.0	23.0	20.5	21.5
13	20.5	18.0	19.0	22.5	19.0	21.0	20.5	19.5	20.0	22.0	20.0	21.5
14	18.0	17.0	17.5	21.0	19.5	20.0	20.0	19.0	19.0	21.0	17.5	19.5
15	18.5	16.5	17.5	20.5	19.0	19.5	23.0	18.0	20.0	20.0	17.5	19.0
16	21.5	18.0	19.5	21.5	18.5	20.0	24.5	20.5	22.0	18.0	16.0	17.0
17	---	---	---	22.0	19.0	20.0	22.0	19.0	21.0	18.0	14.0	16.0
18	---	---	---	24.5	19.0	21.5	20.5	18.5	19.5	18.0	14.5	16.5
19	---	---	---	22.0	18.0	19.5	21.0	17.5	19.0	18.0	16.5	17.0
20	---	---	---	22.0	17.5	19.5	21.0	17.5	19.0	20.0	16.0	18.0
21	---	---	---	23.0	18.0	20.5	20.5	16.5	18.5	20.5	18.0	19.0
22	---	---	---	---	---	---	20.5	16.5	18.5	19.0	16.0	17.5
23	23.5	19.0	21.0	---	---	---	20.0	18.0	19.0	17.0	16.0	16.5
24	23.5	19.0	21.5	---	---	---	22.0	18.5	20.0	19.5	17.0	18.0
25	25.5	20.5	22.5	21.5	18.5	20.0	23.0	18.5	20.5	18.0	13.0	16.5
26	---	---	---	20.0	18.5	19.0	22.5	18.5	20.5	13.0	12.5	13.0
27	---	---	---	20.5	18.5	19.5	21.5	19.0	20.5	15.5	12.0	13.5
28	22.5	20.0	21.5	23.5	19.5	21.0	22.5	19.5	21.0	16.0	13.0	14.5
29	22.5	20.0	21.0	23.0	20.5	21.5	22.0	20.0	21.0	15.0	12.5	13.5
30	22.5	18.5	20.5	24.0	21.0	22.0	23.0	20.0	21.5	15.0	11.5	13.0
31	---	---	---	25.0	21.5	23.0	23.0	21.0	22.0	---	---	---
MONTH	25.5	14.5	19.7	25.0	17.5	20.9	26.0	16.5	21.1	24.0	11.5	18.2

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.3	8.6	9.0	12.7	9.1	10.4	13.1	12.0	12.6	---	---	---
2	9.7	8.7	9.1	10.2	8.6	9.3	---	---	---	---	---	---
3	10.0	8.6	9.2	10.2	9.1	9.8	---	---	---	---	---	---
4	9.1	8.4	8.6	11.3	10.2	10.7	---	---	---	---	---	---
5	9.7	8.7	9.4	11.9	10.5	11.0	---	---	---	---	---	---
6	10.2	9.4	9.8	11.9	10.0	10.8	---	---	---	---	---	---
7	9.7	8.7	9.4	12.1	10.0	10.9	---	---	---	---	---	---
8	9.9	8.7	9.2	12.7	10.5	11.4	---	---	---	---	---	---
9	10.0	8.3	9.1	12.9	10.3	11.4	---	---	---	---	---	---
10	8.4	8.1	8.3	12.8	9.7	10.9	---	---	---	---	---	---
11	8.4	8.2	8.3	12.2	9.5	10.5	---	---	---	---	---	---
12	9.3	8.3	8.8	13.5	10.3	11.5	---	---	---	---	---	---
13	9.6	8.2	8.9	13.5	10.1	11.3	---	---	---	---	---	---
14	9.7	8.1	8.8	13.0	10.0	11.1	---	---	---	---	---	---
15	10.4	8.8	9.5	13.4	10.2	11.5	---	---	---	---	---	---
16	10.7	8.8	9.6	13.5	10.5	11.7	---	---	---	---	---	---
17	10.4	8.3	9.2	14.1	11.2	12.4	---	---	---	---	---	---
18	9.9	8.1	9.0	14.2	11.0	12.6	---	---	---	---	---	---
19	11.2	8.8	9.8	13.7	10.3	11.6	---	---	---	---	---	---
20	9.8	9.0	9.4	13.4	9.3	11.0	---	---	---	---	---	---
21	11.0	9.3	9.9	12.6	9.0	10.2	---	---	---	---	---	---
22	11.3	9.0	10.0	11.6	8.8	9.9	---	---	---	---	---	---
23	11.2	9.0	9.9	11.9	8.2	9.6	---	---	---	---	---	---
24	11.6	9.7	10.4	10.8	8.3	9.2	---	---	---	---	---	---
25	12.0	9.7	10.5	10.3	8.4	9.0	---	---	---	---	---	---
26	12.2	9.7	10.6	11.5	8.6	9.5	---	---	---	---	---	---
27	12.3	9.4	10.5	9.6	8.9	9.3	---	---	---	---	---	---
28	12.5	9.6	10.8	10.5	9.6	10.0	---	---	---	---	---	---
29	12.6	10.0	11.0	11.4	10.1	10.8	---	---	---	---	---	---
30	12.6	9.6	10.7	12.3	11.1	11.8	---	---	---	---	---	---
31	12.7	9.3	10.6	---	---	---	---	---	---	---	---	---
MONTH	12.7	8.1	9.6	14.2	8.2	10.7	13.1	12.0	12.6	---	---	---

CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	12.0	10.1	11.1	11.3	9.9	10.6
2	---	---	---	12.8	11.5	12.0	11.6	10.0	10.9	10.9	9.7	10.2
3	---	---	---	13.3	11.3	12.2	11.2	9.4	10.3	12.3	9.8	10.7
4	---	---	---	13.4	11.0	12.1	10.2	8.8	9.7	12.2	9.5	10.9
5	---	---	---	13.3	10.5	11.7	12.0	10.2	11.2	11.7	8.9	10.3
6	---	---	---	13.9	10.6	12.1	12.5	9.9	11.3	11.3	8.6	9.8
7	---	---	---	14.0	10.3	12.2	12.5	9.7	11.0	11.1	8.4	9.6
8	---	---	---	14.0	9.2	11.5	12.0	8.8	10.3	10.9	8.4	9.4
9	---	---	---	13.8	9.2	11.1	12.5	9.1	11.1	10.4	8.3	9.2
10	---	---	---	14.4	9.3	11.4	12.7	10.2	11.5	10.1	8.3	9.0
11	---	---	---	12.2	9.7	10.7	13.1	10.3	11.5	9.7	8.7	9.1
12	---	---	---	12.2	10.2	11.2	13.1	10.1	11.4	9.7	7.8	8.9
13	---	---	---	---	---	---	13.6	10.2	11.8	9.3	7.7	8.4
14	---	---	---	---	---	---	13.5	9.7	11.6	9.0	7.9	8.5
15	---	---	---	---	---	---	12.5	9.5	10.8	9.2	8.2	8.8
16	---	---	---	---	---	---	12.0	8.1	10.1	9.9	8.6	9.2
17	---	---	---	---	---	---	10.3	8.1	9.6	9.6	8.3	8.9
18	---	---	---	15.1	12.3	13.6	11.5	10.3	10.8	9.3	7.8	8.6
19	---	---	---	15.2	11.8	13.5	12.1	9.7	10.9	8.7	7.8	8.3
20	---	---	---	15.1	11.5	13.1	11.5	9.4	10.4	9.5	8.7	9.2
21	---	---	---	13.5	8.4	12.4	10.6	9.4	10.1	9.5	9.1	9.4
22	---	---	---	---	---	---	10.9	10.5	10.7	9.5	9.1	9.3
23	---	---	---	---	---	---	11.4	10.6	11.0	9.7	9.0	9.2
24	---	---	---	11.4	10.1	10.8	11.4	9.8	10.7	9.2	8.3	8.8
25	13.6	12.0	12.8	11.1	9.9	10.5	11.0	9.9	10.5	9.0	8.3	8.7
26	13.4	12.4	12.8	10.6	9.8	10.2	11.4	10.2	10.8	9.4	8.2	8.8
27	13.6	11.7	12.7	11.4	9.7	10.6	11.4	10.2	10.9	9.5	8.3	9.0
28	---	---	---	10.7	9.9	10.2	11.5	10.3	10.9	10.0	8.8	9.3
29	---	---	---	11.3	10.5	10.9	11.4	9.9	10.7	10.1	8.7	9.4
30	---	---	---	11.9	10.3	11.1	11.2	9.9	10.5	10.7	8.9	9.8
31	---	---	---	12.0	10.5	11.1	---	---	---	11.0	8.6	9.8
MONTH	13.6	11.7	12.8	15.2	8.4	11.6	13.6	8.1	10.8	12.3	7.7	9.3
	JUNE			JULY			AUGUST			SEPTEMBER		
1	11.6	8.1	9.7	10.0	8.2	9.0	9.3	7.4	8.2	---	---	---
2	10.8	7.5	9.1	10.5	8.1	9.1	9.5	7.6	8.3	---	---	---
3	10.6	7.4	8.8	10.4	7.6	8.9	9.3	7.6	8.3	---	---	---
4	10.7	7.8	9.1	9.4	7.7	8.5	8.6	7.9	8.3	---	---	---
5	10.6	8.1	9.2	9.7	7.9	8.5	9.1	8.0	8.4	---	---	---
6	9.6	8.2	8.9	9.8	7.9	8.7	9.3	8.0	8.5	10.2	8.3	9.1
7	10.6	8.4	9.2	9.9	8.0	8.8	9.2	7.6	8.3	10.8	8.6	9.4
8	10.1	8.1	9.1	10.3	8.1	9.1	9.6	7.5	8.4	11.2	8.4	9.5
9	9.7	7.5	8.6	10.2	7.9	8.9	10.0	7.7	8.5	11.2	8.0	9.2
10	9.2	7.2	8.2	9.4	7.3	8.1	10.5	7.6	8.7	11.3	7.5	9.1
11	8.8	6.9	7.7	9.5	7.2	8.1	10.6	7.8	8.9	11.2	7.6	9.0
12	8.6	7.0	7.6	9.9	7.3	8.5	10.5	7.8	8.8	10.9	7.3	8.9
13	8.8	7.2	8.4	10.1	7.7	8.7	10.0	7.9	8.7	8.9	7.3	8.0
14	9.1	8.4	8.8	9.1	7.8	8.3	9.1	8.0	8.5	9.9	7.8	8.7
15	9.7	8.9	9.3	9.0	7.5	8.2	9.5	7.6	8.6	8.7	7.8	8.4
16	9.7	8.4	9.1	9.2	7.7	8.2	9.3	7.4	8.2	9.5	8.6	8.9
17	---	---	---	9.1	7.5	8.1	10.1	7.4	8.4	10.3	8.7	9.3
18	---	---	---	8.9	6.9	7.9	9.1	7.6	8.3	10.8	8.6	9.4
19	---	---	---	8.6	7.0	7.8	10.3	8.4	9.1	9.2	8.4	8.7
20	---	---	---	9.2	7.8	8.5	10.6	8.4	9.3	10.1	8.4	9.1
21	---	---	---	9.2	7.5	8.3	11.1	8.6	9.7	10.6	8.1	9.0
22	---	---	---	---	---	---	11.4	9.0	10.0	11.5	8.2	9.5
23	8.4	7.9	8.2	---	---	---	11.4	9.0	10.0	10.2	8.5	9.2
24	8.6	7.9	8.3	---	---	---	11.9	8.9	10.1	11.1	8.1	9.0
25	8.6	7.5	8.1	9.7	8.0	8.7	11.8	8.6	9.8	10.9	7.9	9.4
26	---	---	---	8.6	7.8	8.3	11.7	8.4	9.7	10.4	9.9	10.2
27	---	---	---	8.9	8.1	8.6	11.3	8.3	9.4	10.6	9.8	10.3
28	10.3	7.8	8.6	9.0	7.8	8.4	10.5	8.0	8.9	10.3	9.2	9.9
29	9.3	8.2	8.6	9.0	7.7	8.2	9.9	8.0	8.8	10.8	9.2	9.9
30	9.6	8.3	8.9	9.3	7.7	8.2	10.1	8.0	8.8	11.2	9.5	10.2
31	---	---	---	9.2	7.6	8.2	9.2	7.6	8.3	---	---	---
MONTH	11.6	6.9	8.7	10.5	6.9	8.5	11.9	7.4	8.8	11.5	7.3	9.3